Pugliese (*Jour. de phys. et de path. gen.*, 1905, tome vii. p. 437) has discovered that from saline extracts which favor coagulation an antithrombine can also be obtained. Of more importance is the fact, which the author believes he has demonstrated for the first time, that an anticoagulating substance is present in the blood itself, or at least in the blood of dogs and certain birds. The blood of birds gives an extract which is more active than that of dogs, but contains less antithrombine than peptone blood. Pugliese concludes that in the blood there are coagulating and anticoagulating substances, which, as has been suggested by Ellinger and Spiro, may circulate in equilibrium. The first may be produced directly in the blood by the destruction of the formed elements, while the second or anticoagulating substances are thrown into the circulation by the organs and tissues, especially the liver. These anticoagulating substances pass through the circulatory system and neutralize the thrombine or arrest the transformation of zymogen into fibrin ferment. When the blood is drawn from the vessels it no longer receives anticoagulating substances from the tissues, and therefore only remains liquid for a varying time, depending upon the amount of antithrombine which it contains.

Enzymes and Antienzymes of Inflammatory Exudates.—Opie (*Journal of Experimental Medicine*, 1905, vol. vii. p. 316) has studied, by means of autolysis, the proteolytic ferments in sterile exudates obtained by injections of aleuronat into the pleural cavity of dogs. The cells of the purulent exudate, as it is obtained, contain a ferment twenty-four to forty-eight hours after injection, though the ferment action is more marked three or four days after injection of the aleuronat. The amount of proteolytic digestion was determined by estimating the nitrogen of the uncoagulable proteid of the autolysed exudates. The cells of the exudates washed free of serum showed much greater autolysis than the original fluid, and further experiments showed that this fact was due to the presence of an antienzymotic action of the serum. This power of inhibiting the action of the proteolytic ferments contained in the leukocytes is also present in the blood serum, whence it probably passes into the inflammatory exudate. The antibody contained in the serum is destroyed by a temperature of 75° C. The proteolytic ferments of the leukocytes act both in an acid and in an alkaline medium, but are most efficient in the latter. The antienzymotic action of the serum is favored by an alkaline reaction, but is completely lost in an acid medium.

Experimental Studies in Yellow Fever and Malaria.—*Bulletin* No 14, Yellow Fever Institute, forms the report of Working Party No. 2, under the direction of Rosenau, Parker, Francis, and Beyer. The work of this party was carried on at Vera Cruz, Mexico, during the late summer and autumn of 1903. The party directed its work, especially toward investigating the cause of yellow fever. They first studied the bodies described by Parker, Beyer, and Pothin as myxococcidium stegomyiæ, which were considered to be animal parasites in mosquitoes. The party found these bodies, however, in many normal mosquitoes, and from their work conclude that they are yeast cells. They were unable to find in the blood of yellow fever patients, by the use of various stains, anything that might bear a casual relation to the disease, although they consider it proved that the infection of yellow fever is in the blood serum early in the disease.

They found that after blood serum drawn from a yellow fever patient had been passed through a Pasteur-Chamberland B filter it was capable of producing yellow fever when injected intravenously into non-immunes. The blood serum used was obtained from an individual in whom yellow fever had been produced experimentally by the bite of a mosquito. After filtration an equal amount of normal salt solution was added to the serum; 5 c.c. of this mixture was injected into two non-immunes, and 3.5 c.c. of it was injected into a third. All developed typical attacks of yellow fever, although carefully guarded from infection; all recovered. Because the virus can be passed through this filter is no reason, according to the authors, for assuming that it is necessarily ultramicroscopic, for further experiments showed that carbon particles visible with Zeiss lenses would also pass through the same filter.

The authors' studies show that the period of incubation of yellow fever is from three to six days, usually the former, in authentic cases produced by bites of mosquitoes. When the disease is produced by the inoculation of serum the incubation period is less regular. Their work confirms that of Reed and his party in that they found that yellow fever may be conveyed to a non-immune by the bite of an infected stegomyia fasciata, and that fomites play no part in the transmission. They made a number of observations in regard to the habits of mosquitoes and experimented upon methods for protection from them, and for their extermination. They consider sulphur dioxide the best gaseous insecticide with which they worked. The party undertook some filtration experiments with malarial blood, with the hope that they might elucidate their findings with the blood serum of yellow fever. It was found that the tertian and æstivo-autumnal malarial parasites would not pass through a Berkefeld filter. The serum obtained from a case during the chill of tertian fever, after filtration produced, however, a chill, fever, and sweating when injected into another man. The result was not obtained by serum drawn from a patient during the decline of an æstivo-autumnal paroxysm.

The authors consider that they demonstrated a poison in the blood of a man during the chill of tertian malaria, but that their data are too limited to consider it as the malarial toxin.

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equal as possible at the beginning of the experiment, and since they were cared for all together in precisely the same way, excepting in respect to specific treatment, the authors think it but fair to conclude that the six treated animals were favorably influenced by the treatment. The authors hold that under such treatment as was given, tuberculous lesions do not extend, on the contrary, that they recede and that new implantations do not occur, even upon prolonged contact with tuberculous herd mates.

The Biology of the Micro-organism of Actinomycosis.—J. H. WRIGHT (*Journal of Medical Research*, 1905, vol. xiii. p. 349) presents in an essay, to which was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, an extensive study on the biology of the branching filamentous micro-organisms isolated in pure culture from 13 cases in man and 2 in cattle of actinomycosis. He considers the organisms to be all of one species, essentially an anaerobe, growing well only in agar and bouillon and in the incubator. He found that the filaments took on the "club" appearance only when grown in immediate contact with animal fluids or within the animal body. Experimental inoculation caused the formation of tumor masses of small sizes, which showed but little progressive tendency. The organism could be regained, but there was little evidence that multiplication had taken place within the animal.

The author considers actinomyces bovis to be the proper name for the organism. He does not accept the prevalent belief, based on the work of Bostroem, Gasperini, and others, that the specific infectious agent of actinomycosis is to be found among certain branching micro-organisms widely disseminated in the outer world, which differ profoundly from actinomyces bovis in having spore-like reproductive elements. On account of the fact that the organism he described does not grow on all culture media and practically not at all at room temperature, the author does not believe that it has its usual habitat outside of the body. He advances the hypothesis that the organism is a normal inhabitant of the secretions of the buccal cavity and of the gastrointestinal tract. The part played by foreign bodies he believes is in the formation of a nidus where the actinomyces develop to form actinomycosis, and he does not think that straw and like foreign bodies so frequently found in actinomycotic lesions are the carriers of the micro-organism.

The "club" formation about the filaments is considered as a protective function. The bacteria so frequently found accompanying the disease are, the author believes, important in the spread and continuance of the infection, forming new sinuses to be reinfected with actinomyces bovis from the buccal cavity and the gastrointestinal tract.

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